241 242 acres[1] which yielded 84 tons of hulled coffee in 1938-39. Some
[133] 1,000 cocoa trees were also planted in the pre-war period, although
only the copra and coffee were worked during this time. All com-
[177] mercial agriculture ceased with the Japanese invasion in the second
world war and was again interrupted by the eruption of Mt Lamington
[731] in 1951. The principle of compulsion was withdrawn in the same year
and community enterprise largely ceased in the mid 1950s with an
[466] increasing trend towards individual plantings. The whole scheme
was characterised not only by low returns to labour, delays in pay-
ment,[2] frequent disputed claims to plantings and serious problems
in work organisation, but also by a definite feeling of resentment
on the part of the indigenous participants.

(c) War and natural disaster

177 The Orokaiva view of the government was no doubt influenced by
[131] the second world war, which led to the Japanese occupation of the
Northern District from July 1942 to January 1943, and by the erup-
tion of Mt Lamington in January 1951, causing the death of over
4,000 people and the destruction of the district headquarters and
staff at Higaturu.

657 The impact of the Japanese invasion and subsequent Allied re-
advance has never been assessed but must be considered profound.
All Australian administration ceased and, when resumed, was vested
in the Australian New Guinea Administrative Unit (ANGAU), a military
[466] authority. Several thousand men co-opted as carriers by both
Australians and Japanese worked under very arduous conditions.[3]
Since the Orokaiva lay athwart the main Buna-Kokoda route which was
the scene of fierce fighting, many villagers retreated into the
surrounding hills where they were obliged to subsist on very
[687] limited resources because of the absence of much of the potential
labour force.[4] Others sided with the Japanese or profited by the
[541] power vacuum to attack or betray Allied troops and civilians or to
assert their authority over other Orokaiva. On resumption of
Australian rule, twenty-two men were sentenced for such deeds by a
military tribunal and publicly hanged at Sangara and Higaturu.[5]

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1 An estimated 111,000 trees at a spacing of 10 by 10 feet.

2 As much as three years lapsing between delivery and payment (see DDA, DS-17-4-5).

3 For details of terms for the conscription and of conditions, see McCarthy 1959:116, 132.

[165] 4 A 1948 report refers to a rapidly decreasing population on the northern slopes of Mt Lamington and attributes it in part to the war when many died from malnutrition while hiding in the bush (Higaturu 29-8-33).

5 A European informant stated that 'several thousand Orokaiva' witnessed the execution, the women 'wailing and mutilating themselves'.

CHAPTER V: Disease

Section 1: The Community as a Carrier of Disease

164 Data on Orokaiva health are sparse due to the absence of medical research. Some of the picture may be seen from the table of 1966 hospital admissions of St. Margaret's Hospital, Kroro (Table 11).[A] The figures for serious illness over the whole of the Northern District, are of course far higher than these figures indicate as only a fraction of cases of illness come to the notice of the hospital. It is estimated at 90% of the population is infected with malaria while filiariasis, gastro-enteritis, influenza, scabies and other skin diseases are also [146] extremely common. Some rough studies of Orokaiva diet, carried out under the auspices of Saiho hospital, seem to indicate that malnutrition plays only a minor role as the cause of Orokaiva disease, and patients admitted to hospital rarely have diseases caused by malnutrition. Malaria causes many deaths among children, including [165] one in Sivepe during the time of my stay. People are extremely anxious [153] about disease, even mild attacks of influenza or of malarial fever. [154] The cause was always thought to be sorcery.

Section 2: The Community as the Victim of Unfamiliar Diseases

164 No unusual incidence of disease was noticed in the evacuation
731 camps, except for infections due to bad water supply at Cape Killerton camp which was evacuated after a week. Dr. Gunther noted some spinal meningitis and paratyphoid as "the result of close living together in camp." Some old people died, as informants told me, due to grief and loss of the will to live after the disaster.

Section 3: Community's Perception of New Location as Healthy or Unhealthy

753 The inhabitants of Ilimo camp were not particularly concerned
731 about health dangers in their new location. Ilimo was not far away from their own territory; villages such as Sivepe had had at least some friendly contact there and their fears were concentrated more on the safety of some of their kinsmen and the threat to the land and possessions they had left behind. It was different for the Sangara and Isivita people who were encamped in the Oro Bay area, in the midst

A [See Cat. 116, p. 216--Analyst]

CHAPTER VI: Addition and Loss of Community Members

161 Though the population of Sivepe has increased between the years 1951 and 1967, this increase is less than might have been expected after the settling in Sivepe of two additional Jegase families and [166] six Sorovi households. An analysis of Table 16[A] will show that the net population increase in 16 years corresponds very closely to the increase due to the immigration of 15 Jegase and 26 Sorovi people into Sivepe. The 1951 figures showed 40 children who, today, should range between the ages of 17 to 35; 15 of these were boys. Looking at the present Sivepe population, we find only six men of that age group and only three of these were children in Sivepe in 1951 (the other three are immigrants). This depletion of the 17-35 year age group is one of the most striking features of the present population structure.

The second striking change is in the number of children--there are almost twice as many of them in Sivepe today as there were in 1951. [158] It seems likely that this increase should in part at least be due to [165] the improved health services: the monthly clinics, with the possibility 167 of immediate referral of young children to the Saiho hospital, do save a number of lives, even if the mortality rate is still high.

166 The migration of young women into and out of Sivepe is a continuous process due to virilocal residence; a far more significant [591] demographic process is the outflow of men as a result of labour migration. [464] Rimoldi reported that ten male siblings and sons of householders of his (Jegase-Timuma) sample were employed outside Sivepe in 1962; in 1966, I found that this figure had risen to 12. I have only included men who had been residents of Sivepe and who had left, as adults, to find work. By this criterion, it would not be possible to class absent brothers and sons of Sorovi men as "labour migrants from Sivepe," as these men had never lived in Sivepe at any time but had [619] been residents of Garumbi before they became labour migrants. There [177] were, at the time of the survey, no labour migrants of the Seho clan. The fact that Jegase had many labour migrants while Seho had not even one certainly accentuated the relative dearth of contact with the outside world that characterised Seho. On the other hand, we should not read too much significance into it. It so happened that the Seho men came from very small families; most of them actually had no adult brothers living, and though they had many children, the only adult children they had happened to be girls. Thus they collected a disproportionate amount of bridewealth but could not contribute much to the external labour market. The Seho men were not actually as cut off from the world as these statistics might suggest: all had sisters' sons and sisters' husbands, real or classificatory, who were labour migrants; two had themselves been labour migrants earlier in life. In

A [See Cat. 116, p. 225--Analyst]

CHAPTER XI: Epilogue--The Case of Hoborita

Section 1: Comparison Between Resettlement of Sivepa and Hoborita

731 123 My subject of study obliged me, both in Sivepa and Inonda, to inquire repeatedly into the state of affairs in 1951. My informants showed only limited interest in this line of inquiry. Robert, in Sivepa, even began to tease me by composing a song about what he considered to be an oddity of mine; every second line in this song (which he improvised as we walked along the road) began with the words "iji tiri pejetei" (the time when the volcano blew up)--I knew that from that time onwards I could never use this phrase without looking a little ridiculous. Such levity would have been unthinkable in Hoborita. For most Hoborita people, the time of the eruption marked the death of some, or many, of their closest relatives.

731 (165) In the files of the Department of District Administration I saw the official estimate of indigenous casualties in the eruption (Table 1).[2] The toll of the dead from the Sangara tribe was evidently established by taking the total resident population of the Sangara group of villages (1964) and subtracting from that total, 170 known Sangara survivors. To these figures, 800 "Andamba dead" must be added as these were also Sangara. According to these figures, 94% of all Sangara died in the eruption. I have already pointed out that most of the survivors either came from villages lying at the boundary of the devastation area or happened to be away from home when the disaster occurred. They escaped to Cape Killerton, were placed in an evacuation camp at Oro Bay, shifted to Popondetta and in May, 1951, were able to settle at the Northern edge of Sangara territory, in a village called Irihambo where they found themselves under the close personal care of Bishop Hand who encouraged them to build a fine new church. The Bishop's purpose, as he explained to me, was to give this minute remnant of the powerful Sangara tribe a sense of community, some hope in life. (621) It was the people who chose the site for the village; the Bishop hoped that later on, it could become a centre for cocoa production as climate (361) and soil suits this crop very well. At that time, neither the people nor the government seemed aware that the land occupied by the Sangara (425) was no longer in law their property.

425 657 The whole block North of Irihambo as well as East of it had been bought by the Crown around 1910, with the intention of encouraging sugar plantations there, but this plan was stopped by sugar interests in Australia. In the middle 1950's, a new plan arose to use this extremely fertile area for cocoa plantations. Most of it was settled in 1959 by Australian ex-servicemen, financed by a Credit Board (Howlett, 1965). As this plan was in its initial stages, it was discovered that the Sangara people were on the land and, in law, were

A [See Cat. 116, p. 205--Analyst]

dance in Saesabata. But they enjoy very much better conditions than are usual for men who marry unorilocally.

The mortality among the elderly at the time of the eruption was so great that many traditional customs and myths were lost among the Sangara with the elders who knew them. For instance, rituals carried on at birth in Sivepe are no longer practised in Hohorita. For the rest, I did not see many differences between the villages in level of acculturation. Housing conditions in Sivepe were better; money was more plentiful at Hohorita. Dances were far more carefully practised and more expertly performed at Sivepe. Clearly, the Hohorita people spent more time at their coffee; this was given as the reason for neglect in other matters. It may well be that cash-cropping above the level noted at Sivepe has necessary consequences of this sort unless technological changes occur. Ideologically, Hohorita is--as I demonstrated--more deeply involved with the concepts of the New Day than Sivepe.

Though no groups have left Hohorita since it was founded, the co-residence of these many clans does make for a certain instability. The leaders of the Oripa clan group told me that just after the eruption very few Oripa were left, but as the clan was becoming more numerous, it was beginning to think to establishing its own village. Besupa was harbouring similar thoughts. Both these clans were minority clans in their part of the village and this inevitably implied some subordination. In Sivepe, the fusion of Jegase and Timunu had established a fairly equal balance with Seho, as both clan groups were about equal in strength if the greater resources of Seho are taken into account. In Hohorita, however, the supremacy of Horeopa (and Sehopa in the back section of the village) could hardly be challenged. The councillor and the government are opposed to such fission and overcrapping organisations such as the credit union, the women's club, the church, the school, etc. may gradually set up a firm esprit de corps. The importance of tree-crops (as opposed to shifting cultivation) in the Hohorita economy might be a further disincentive to the migration of groups to another village, but Oripa has in mind a new village site which would actually be closer to their coffee gardens.

Section 6: Conclusion

In this study, we have found three complex forces, acting as causes of changes, to be intertwined: forces acting throughout Papua and New Guinea to promote socio-economic development, the effect of the relocation of certain communities near Mount Lamington after the eruption, and the physical and cognitive effects of the eruption itself. The last-mentioned of these forces was far more disastrous for Sangara than for the rest of the Northern District of Papua. In tracing the causes of culture change in Hohorita, we have to give especial emphasis

241 of "dry" gardening, with fire and the digging stick as the essential tools, and either long term rotation of previously occupied areas or breaking in of new forest land. "The immediate family . . . is a self sufficient unit" and "the Orokaiva words for 'work' and 'garden' are one and the same." Consistent with this mobile economic base, settlements are rarely 621 more than hamlet size, with "hardly more than a dozen houses" on the average. Materials for housing are readily available, so that residence can be easily shifted.

The hamlet is based normally on patrilocal-patrilineal principles of organization, with a known strong tendency for new groups to form by "hiving off." Clan affiliations are [614] reckoned from quite recent ancestors, so that at times a given clan may all be in one settlement, though more usually scattered through several closely related settlements. The 592 generally monogamous family units are under the "immediate 621 authority of the father," while the affairs of the local living 622 units are under loose supervision by the hamlet and clan elders, centered on a "men's house" and working together, 422 usually with one strong senior man as "leader." Personal property consists of mobile goods such as tools and utensils, clothing, and body ornaments.

181 In spite of ethnic similarities over a wide region, Williams speaks of the Orokaiva as being a "more than usually quarrelsome and disunited people"—a strong statement to make in the New Guinea setting. Their pre-pacification history was marked by "feuds, dispersals . . . a veritable whirlpool of strife, migration, and counter-migration." Beaver, too, refers to their "turbulent and restless life . . . migration was, in [154] the main, a matter of attacking, fleeing, and pursuing." Supernatural weapons in the form of sorcery were especially feared. Even for Papuans, the Orokaiva proved to be unusually [562] hostile and resistant to whites. Women were often seen ac[782] companying the war parties, carrying food and weapons, and sometimes joining in fights. Williams goes on to say that [628] while the "elementary small sympathy-groups" (the local kin and settlement units, and to a lesser extent the dispersed clan units) were tightly knit, their external relations were [728] precarious. "There were peacemakings or truces, but the truce was always a fragile one, and no (settlement) lived 361 in permanent security." "Hiving off" occurred sometimes 241 as the result of a "quarrel and the fear of retaliatory magic," [578] but more often it was "simply the lax method of horticulture which necessitates the clearing of many areas in succession 361 and sometimes a temporary settlement on a distant site." Another factor could have been food scarcities which tend 261 to occur in exceptionally dry southeast winter seasons. During this period, north and west Lamington area is in a rainshadow 731 zone, and people may have to scatter out to live on wild 165 roots and fruits. The implication of this is that even the excision of the 4,000 persons from the Orokaiva group who were killed involved no extensive shattering of valued ties.

361 Williams and others judge that with the modern pacifi176 cation, the Orokaiva have tended to disperse in even smaller living units than before. This appears to apply particularly [999] to the relatively densely populated Lamington slopes, though a few instances of larger aggregations approaching a village 361 type also occurred, particularly as a result of Mission influ571 ence. Over against this greater dispersal, the people have

why were they so anxious to return home where they could no longer be instructed in its practices? The answer seems to lie in the land tenure problem, discussed later, which was reflecting fundamental structural changes in the society. But why was this problem passed over in silence in all the statements about the "new age" recorded for the period immediately after the eruption? The answer to this question may be mere speculation, but it is clear that by excluding land tenure from our analysis, we shall become the victims of our informants' own mystifications, which is all the more regrettable since, by 1966, Orokaiva ideologists had recognized the importance of the land tenure problem for the setting up of the "new age." Our final analysis is therefore based on an unconscious model which includes this factor.

THE EVENT AND ITS SETTING

On 21 January 1951, Mount Lamington, a mountain situated in the Northern District of Papua, was torn apart by what is technically known as a Pelean eruption. A paroxysmal explosion burst from the crater and produced a *nuée ardente* which completely devastated a surrounding area of 68 square miles (Taylor 1958:7).[6] Almost 4,000 people, mostly belonging to the Orokaiva-speaking group of tribes of the Northern District, were killed. The word "Orokaiva" is used here to designate speakers of the Orokaiva language, resident in an area roughly coinciding with the Popondetta, Sohe Popondetta, and Saiho census divisions (see map 1).[7] This area comprises the foothills of Mount Lamington and the alluvial plains to the north and east. The area is rather homogenous in culture, and dialect differences are minor. Destruction in this inner zone of devastation was almost complete. A further 22 square miles were partially devastated, and it was from this area that some 3,000 inhabitants were able to save themselves by running away from the *nuée ardente*. The population of the Mount Lamington foothills, within a radius of at least 10 miles from the crater, fled from their villages as the explosion threw stones over all the area, destroyed the administrative center at Higaturu, and blotted out the light of the sun.

It was at this point that the administration of the Territory of Papua intervened. Australian authorities sent in supplies for the

A [See Category 102, p. 303--Analyst]